

106 CONTROL OF MATERIALS

106.01 Source of Supply and Quality Requirements

Subsection 106.01 requires the use of new materials unless noted otherwise elsewhere in the contract documents. *New* means unused, not previously placed in service, and the same appearance, quality, dimensions, and performance as material direct from the factory or fabrication plant. For example, corrugated pipe salvaged by the Contractor from a previous project does not qualify as new pipe. The Resident Engineer may still allow the pipe, but at a reduced unit price. On the other hand, unused concrete pipe that has been sitting in a pipe supplier's yard for a few years may qualify as new if it is undamaged and in the same basic condition as the day it was cast.

Inspectors should be careful about the water the Contractor uses for dust palliative, compaction, cleanup, or landscape establishment. Untreated effluent from industrial or mining operations must not be used. Effluent from these sources may contain hazardous microbes or chemicals that pose a health risk to everyone at the site. In general, potable water or water from an approved lake, stream, or irrigation canal is acceptable for construction work.

106.04 Tests and Acceptance of Material

When Contractor Quality Control is specified it is the intent to place the responsibility of materials quality control (or process control) with the Contractor. Only certain construction materials will fall under this quality control specification. When the bid quantity for the following items exceeds the minimum amount then Special Provisions will require Contractor Quality Control: Subsections 106.04 (B) & (C) are geared toward the sampling, testing, and control of these materials. No quality control plans will be required. See Special Provisions for item 9240170 for Contractor Quality Control measurement and payment.

Type of Material	Subsection	Minimum Bid Quantity
Earthwork	203-2.02	5,000 cubic yards
Aggregate Bases & Subbases	303-3.04	1,000 cubic yards
Asphaltic Concrete	406-5	All except Misc. Paving
End Product AC & MA	416-5	Any and all
SHRP End Product AC & MA	417-5	Any and all
Pipe Bedding & Backfill	501-3.01(A)	60" diameter, or length>600 ft.
Concrete (Structural & Paving)	1006-4.01(A)	300 cubic yards

The specification requires the Quality Control Manager to be a qualified employee of the Contractor. *Qualified* is interpreted to mean someone who is empowered at the project site to reject materials without the approval from someone else within the Contractor's organization. This could be a superintendent, foreperson, quality control supervisor, or any other person who has management authority. However, this person must be at the project site during all construction activities related to the materials covered under the quality control specification.

The Quality Control Supervisor and the Testing Technicians are required to be employees of the same lab that has been certified for materials testing work on the project. This requirement ensures that only testing equipment and employees covered by the lab certification are used. Contractors cannot use their own employees to do material testing unless they have their own approved testing lab.

Contractors often ask why ADOT needs to enforce the qualification requirements for the Contractor's quality control personnel. They point out that ADOT still does acceptance testing anyway.

One reason is that ADOT wants competent people doing the testing so the test results are accurate and unbiased by the testing procedure itself. Qualified people provide some assurance that a testing person is competent enough under various work conditions to minimize the influence of the testing procedure on the test results.

Another reason is that the Contractor's materials testing procedures must consistently meet some minimum standards so ADOT's acceptance testing won't turn out to be the Contractor's actual quality control. If the acceptance testing becomes the quality control for the Contractor, the chances for rework are high since acceptance testing is usually done after work completion.

Resident Engineers may withhold payments for quality control work if the Contractor does not follow the sampling and testing requirement in the Standard Specifications and Special Provisions. In addition, failure of the contractor to submit current Weekly Quality Control Reports, will be grounds for the Engineer to deduct monies from the contractor's progress payment. Refer to Section 9240170 of the Special Provisions for determination of amount to be withheld. In some cases the Resident Engineer may need to temporarily shutdown material processing operations until the Contractor can comply with the sampling and testing procedures required by the Department.

Even though the Contractor is performing quality control sampling and testing, Inspectors and Project Supervisors still need to sample and test for acceptance. This "side-by-side" testing may seem redundant; however, ADOT's testing should be done as the final and independent check of the materials. The frequencies for acceptance sampling and testing should be at the same rates as in the Sampling Guide Schedule of the ADOT Materials Testing Manual.

106.09 Storage of Materials

Material stored on the project should be observed to determine whether the storage practices may be harmful. Potentially harmful practices include stacking too high (causing bending, denting, or crushing), exposing to weather, or providing inadequate base (causing soiling, staining, or rusting).

No partial payments should be made if materials are not stored in a manner that will provide adequate protection. Adequate protection is that which will preserve materials in their original condition.

If material is damaged in storage, any payment for material allowance should be recovered until the damage is repaired or the material is replaced.

106.12 Department Furnished Material

When ADOT furnishes material for the Contractor to use on the project, the Department is responsible for the quality and quantity of the material supplied. When the Contractor takes control of the material, the Contractor becomes responsible for the material.

The Resident Engineer should document the condition of the material and verify its quantity before it is released to the Contractor. This protects the Department if the material is later mishandled. Some testing may need to be done on the material to accurately determine its quality. A letter or another form of documentation should be used to establish when the material was officially turned over to the Contractor.

106.15 Domestic Materials

On projects with federal aid funding the Special Provisions will require the Contractor to certify that certain

materials were produced, or processed in the United States. The Inspector must read the Special Provisions for each project and ensure Contractor compliance.